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THE DISASTER RELIEF RESPONSE IN THE DOMINICAN REPUBLIC  
FOLLOWING HURRICANE DAVID AND  
TROPICAL STORM FREDERICK

WITH PARTICULAR EMPHASIS ON THE  
USAID EMERGENCY HOUSING PROGRAM

Prepared for

Office of Housing  
U.S. Agency for International Development  
Washington, D.C.

in collaboration with the

Office of Foreign Disaster Assistance  
U.S. Agency for International Development

Prepared by

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## I. INTRODUCTION

This evaluation study was conducted during October 1980 in the Dominican Republic by PADCO under the auspices of the Office of Housing and the Office of Foreign Disaster Relief Assistance of the Agency for International Development. The evaluation report presents an overview of the disaster relief response in housing in the Dominican Republic following Hurricane David in August 1979.

The study team was led by Lee Baker of PADCO. Joseph E. Arington, PADCO Vice President, and Mr. Harry Birnholz of DS/H also participated in carrying out the evaluation study.

While an initial part of USAID/DR post-hurricane efforts were conceptualized in terms of the 1976 USAID/Guatemala Materials Distribution Program following the 1976 earthquake, the total efforts of both USAID and the public and private sector were not significantly tied in to an adoption of the Guatemalan basic approach but rather included a variety of approaches largely carried out based on a perception of the distinct nature of the Dominican situation. In that light, and given the limited time provided for the present evaluation, the PADCO team decided to treat the evaluation of the post-disaster efforts in the Dominican Republic in terms of the "learning process" which took place as both the public and private sector attempted to respond to the emergency.

In addition to the wealth of information provided by the Program Manager and Acting Program Manager, the conclusions and recommendations reached concerning the total reconstruction program in Dominica are based on a series of field visits to the service agencies and interviews with informed individuals in affected areas. Observations, comments and opinions on the operation of the program and its impact were elicited from various sources. These sources include: the service agency staffs, residents of the rural areas who were and were not benefited by the program; officials from government ministries (most particularly the National Housing Institute -- INVI); social service agency personnel knowledgeable about the program; and members of religious groups who had contact with the program. Also, USAID permanent staff were interviewed in the Dominican Republic and Washington in an attempt to understand not only the emergency reconstruction program, but also the overall planning and coordination that went into the entire disaster relief effort in housing.

## II. THE IMPACT OF HURRICANE DAVID AND TROPICAL STORM FREDERICK

Hurricane David penetrated the Dominican territory on the afternoon of August 31 on the southeastern side of the island in an area located between the small communities of Nizao and Sabana Grande de Palenque on a line which almost divides San Cristobal and Peravia Provinces. Its winds were estimated at 120 kilometers per hour within an 80 kilometer radius of the eye of the hurricane. Gusts of wind were estimated at about 240 kph. Its effects were felt over a width of 400 kilometers wide and provoked over 400 milimeters of rain. Although as it penetrated the Dominican Republic it was losing force, especially in passing then hitting the central highlands area, its effects were devastating causing major loss of human life and destroying agriculture, housing and schools and other public and private buildings, as well as infrastructure and services.

Five days later, Tropical Storm Frederick entered the island, roughly at a point and trajectory similar to David. Frederick's winds were as high as 75 kph. The additional 250-400 mm of rain which it brought fell on already saturated land causing serious flooding and corresponding destruction of bridges, roads, drainage systems, dams and irrigation systems as well as hydroelectric plants.

Between the 19th of August and the 2nd of September, in some areas over 700 mm of rain fell, approximately 50 percent of the normal annual rainfall for the Republic.

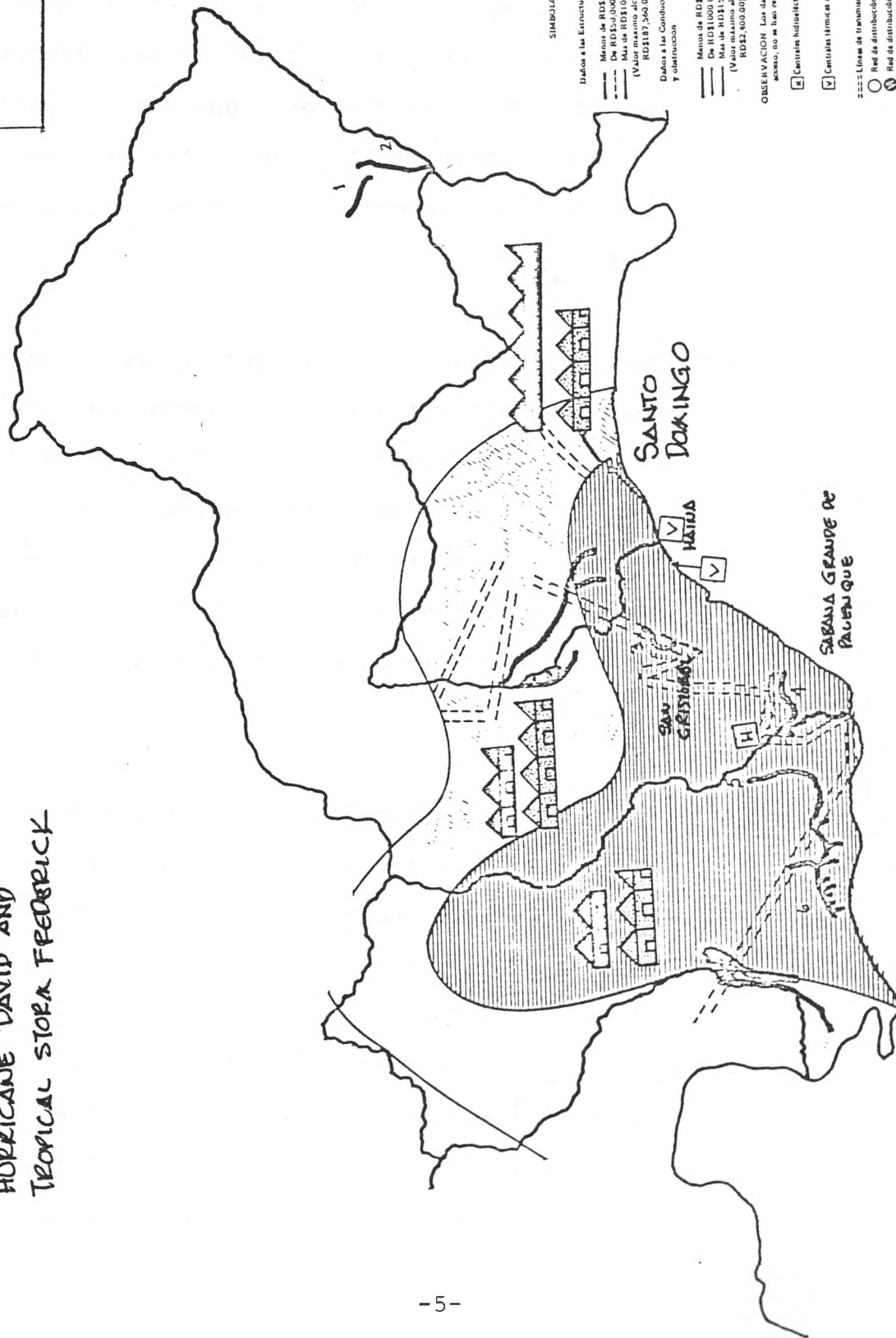
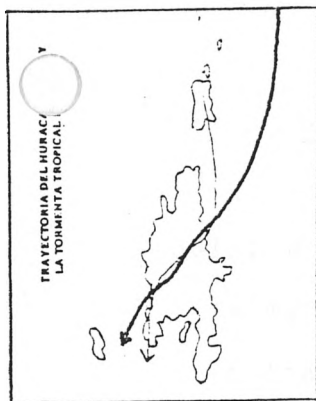
Beyond the loss of human lives, David and Frederick caused grave damage to the productive sector. The disasters occurred just as notable improvements were being observed in the rate of economic growth which gave signs of emerging from a prolonged period of stagnation which dated from the mid-1960's. The areas of the country which suffered the most damage were the southwest and south and north central regions. The provinces of San Cristobal and Peravia were among those hardest hit (see Map 1 for a graphic illustration of the damages caused by David and Frederick). The estimates of damage indicated:

(1) Damage and Effects on the Population

- 2,000 deaths and thousands of injured.
- Approximately 100,000 families homeless.
- economic disarticulation and destruction which stimulated the migration of many residents to the fringes of Santo Domingo and other large cities in search of work, thus increasing an already critical urban-rural migration.

# DRAFT MAP DAMAGES CAUSED BY HURRICANE DAVID AND TROPICAL STORM FREDRICK

MAP 1



## SIMBOLOGIA

### Dafios a las Estructuras de Conduccion

- Menos de RD\$50,000.00
- De RD\$50,000.00 a RD\$100,000.00
- De RD\$100,000.00 a RD\$187,500.00
- De RD\$187,500.00 a RD\$375,000.00
- De RD\$375,000.00 a RD\$750,000.00
- De RD\$750,000.00 a RD\$1,500,000.00
- De RD\$1,500,000.00 a RD\$3,000,000.00
- De RD\$3,000,000.00 a RD\$6,000,000.00
- De RD\$6,000,000.00 a RD\$12,000,000.00
- De RD\$12,000,000.00 a RD\$24,000,000.00
- De RD\$24,000,000.00 a RD\$48,000,000.00
- De RD\$48,000,000.00 a RD\$96,000,000.00
- De RD\$96,000,000.00 a RD\$192,000,000.00
- De RD\$192,000,000.00 a RD\$384,000,000.00
- De RD\$384,000,000.00 a RD\$768,000,000.00
- De RD\$768,000,000.00 a RD\$1,536,000,000.00
- De RD\$1,536,000,000.00 a RD\$3,072,000,000.00
- De RD\$3,072,000,000.00 a RD\$6,144,000,000.00
- De RD\$6,144,000,000.00 a RD\$12,288,000,000.00
- De RD\$12,288,000,000.00 a RD\$24,576,000,000.00
- De RD\$24,576,000,000.00 a RD\$49,152,000,000.00
- De RD\$49,152,000,000.00 a RD\$98,304,000,000.00
- De RD\$98,304,000,000.00 a RD\$196,608,000,000.00
- De RD\$196,608,000,000.00 a RD\$393,216,000,000.00
- De RD\$393,216,000,000.00 a RD\$786,432,000,000.00
- De RD\$786,432,000,000.00 a RD\$1,572,864,000,000.00
- De RD\$1,572,864,000,000.00 a RD\$3,145,728,000,000.00
- De RD\$3,145,728,000,000.00 a RD\$6,291,456,000,000.00
- De RD\$6,291,456,000,000.00 a RD\$12,582,912,000,000.00
- De RD\$12,582,912,000,000.00 a RD\$25,165,824,000,000.00
- De RD\$25,165,824,000,000.00 a RD\$50,331,648,000,000.00
- De RD\$50,331,648,000,000.00 a RD\$100,663,296,000,000.00
- De RD\$100,663,296,000,000.00 a RD\$201,326,592,000,000.00
- De RD\$201,326,592,000,000.00 a RD\$402,653,184,000,000.00
- De RD\$402,653,184,000,000.00 a RD\$805,306,368,000,000.00
- De RD\$805,306,368,000,000.00 a RD\$1,610,612,736,000,000.00
- De RD\$1,610,612,736,000,000.00 a RD\$3,221,225,472,000,000.00
- De RD\$3,221,225,472,000,000.00 a RD\$6,442,450,944,000,000.00
- De RD\$6,442,450,944,000,000.00 a RD\$12,884,901,888,000,000.00
- De RD\$12,884,901,888,000,000.00 a RD\$25,769,803,776,000,000.00
- De RD\$25,769,803,776,000,000.00 a RD\$51,539,607,552,000,000.00
- De RD\$51,539,607,552,000,000.00 a RD\$103,079,215,104,000,000.00
- De RD\$103,079,215,104,000,000.00 a RD\$206,158,430,208,000,000.00
- De RD\$206,158,430,208,000,000.00 a RD\$412,316,860,416,000,000.00
- De RD\$412,316,860,416,000,000.00 a RD\$824,633,720,832,000,000.00
- De RD\$824,633,720,832,000,000.00 a RD\$1,649,267,441,664,000,000.00
- De RD\$1,649,267,441,664,000,000.00 a RD\$3,298,534,883,328,000,000.00
- De RD\$3,298,534,883,328,000,000.00 a RD\$6,597,069,766,656,000,000.00
- De RD\$6,597,069,766,656,000,000.00 a RD\$13,194,139,533,312,000,000.00
- De RD\$13,194,139,533,312,000,000.00 a RD\$26,388,279,066,624,000,000.00
- De RD\$26,388,279,066,624,000,000.00 a RD\$52,776,558,133,248,000,000.00
- De RD\$52,776,558,133,248,000,000.00 a RD\$105,553,116,266,496,000,000.00
- De RD\$105,553,116,266,496,000,000.00 a RD\$211,106,232,532,992,000,000.00
- De RD\$211,106,232,532,992,000,000.00 a RD\$422,212,465,065,984,000,000.00
- De RD\$422,212,465,065,984,000,000.00 a RD\$844,424,930,131,968,000,000.00
- De RD\$844,424,930,131,968,000,000.00 a RD\$1,688,849,860,263,936,000,000.00
- De RD\$1,688,849,860,263,936,000,000.00 a RD\$3,377,699,720,527,872,000,000.00
- De RD\$3,377,699,720,527,872,000,000.00 a RD\$6,755,399,441,055,744,000,000.00
- De RD\$6,755,399,441,055,744,000,000.00 a RD\$13,510,798,882,111,488,000,000.00
- De RD\$13,510,798,882,111,488,000,000.00 a RD\$27,021,597,764,222,976,000,000.00
- De RD\$27,021,597,764,222,976,000,000.00 a RD\$54,043,195,528,445,952,000,000.00
- De RD\$54,043,195,528,445,952,000,000.00 a RD\$108,086,391,056,891,904,000,000.00
- De RD\$108,086,391,056,891,904,000,000.00 a RD\$216,172,782,113,783,808,000,000.00
- De RD\$216,172,782,113,783,808,000,000.00 a RD\$432,345,564,227,567,616,000,000.00
- De RD\$432,345,564,227,567,616,000,000.00 a RD\$864,691,128,455,135,232,000,000.00
- De RD\$864,691,128,455,135,232,000,000.00 a RD\$1,729,382,256,910,270,464,000,000.00
- De RD\$1,729,382,256,910,270,464,000,000.00 a RD\$3,458,764,513,820,540,928,000,000.00
- De RD\$3,458,764,513,820,540,928,000,000.00 a RD\$6,917,529,027,641,081,856,000,000.00
- De RD\$6,917,529,027,641,081,856,000,000.00 a RD\$13,835,058,055,282,163,712,000,000.00
- De RD\$13,835,058,055,282,163,712,000,000.00 a RD\$27,670,116,110,564,327,424,000,000.00
- De RD\$27,670,116,110,564,327,424,000,000.00 a RD\$55,340,232,221,128,654,848,000,000.00
- De RD\$55,340,232,221,128,654,848,000,000.00 a RD\$110,680,464,442,257,309,696,000,000.00
- De RD\$110,680,464,442,257,309,696,000,000.00 a RD\$221,360,928,884,514,619,392,000,000.00
- De RD\$221,360,928,884,514,619,392,000,000.00 a RD\$442,721,857,769,029,238,784,000,000.00
- De RD\$442,721,857,769,029,238,784,000,000.00 a RD\$885,443,715,538,058,477,568,000,000.00
- De RD\$885,443,715,538,058,477,568,000,000.00 a RD\$1,770,887,431,076,116,955,136,000,000.00
- De RD\$1,770,887,431,076,116,955,136,000,000.00 a RD\$3,541,774,862,152,233,910,272,000,000.00
- De RD\$3,541,774,862,152,233,910,272,000,000.00 a RD\$7,083,549,724,304,467,820,544,000,000.00
- De RD\$7,083,549,724,304,467,820,544,000,000.00 a RD\$14,167,099,448,608,935,641,088,000,000.00
- De RD\$14,167,099,448,608,935,641,088,000,000.00 a RD\$28,334,198,897,217,871,282,176,000,000.00
- De RD\$28,334,198,897,217,871,282,176,000,000.00 a RD\$56,668,397,794,435,742,564,352,000,000.00
- De RD\$56,668,397,794,435,742,564,352,000,000.00 a RD\$113,336,795,588,871,485,128,704,000,000.00
- De RD\$113,336,795,588,871,485,128,704,000,000.00 a RD\$226,673,591,177,742,970,257,408,000,000.00
- De RD\$226,673,591,177,742,970,257,408,000,000.00 a RD\$453,347,182,355,485,940,514,816,000,000.00
- De RD\$453,347,182,355,485,940,514,816,000,000.00 a RD\$906,694,364,710,971,881,029,632,000,000.00
- De RD\$906,694,364,710,971,881,029,632,000,000.00 a RD\$1,813,388,729,421,943,762,059,264,000,000.00
- De RD\$1,813,388,729,421,943,762,059,264,000,000.00 a RD\$3,626,777,458,843,887,524,118,528,000,000.00
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- De RD\$7,253,554,917,687,775,048,237,056,000,000.00 a RD\$14,507,109,835,375,550,096,474,112,000,000.00
- De RD\$14,507,109,835,375,550,096,474,112,000,000.00 a RD\$29,014,219,670,751,100,192,948,224,000,000.00
- De RD\$29,014,219,670,751,100,192,948,224,000,000.00 a RD\$58,028,439,341,502,200,385,896,448,000,000.00
- De RD\$58,028,439,341,502,200,385,896,448,000,000.00 a RD\$116,056,878,683,004,400,771,792,896,000,000.00
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- De RD\$7,427,640,235,712,281,649,394,745,344,000,000.00 a RD\$14,855,280,471,424,563,298,789,490,688,000,000.00
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- De RD\$475,368,975,085,586,025,561,263,702,016,000,000.00 a RD\$950,737,950,171,172,051,122,527,404,032,000,000.00
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- De RD\$1,901,475,900,342,344,102,245,054,808,064,000,000.00 a RD\$3,802,951,800,684,688,204,490,109,616,128,000,000.00
- De RD\$3,802,951,800,684,688,204,490,109,616,128,000,000.00 a RD\$7,605,903,601,369,376,408,980,219,232,256,000,000.00
- De RD\$7,605,903,601,369,376,408,980,219,232,256,000,000.00 a RD\$15,211,807,202,738,752,817,960,438,464,512,000,000.00
- De RD\$15,211,807,202,738,752,817,960,438,464,512,000,000.00 a RD\$30,423,614,405,477,505,635,920,876,929,024,000,000.00
- De RD\$30,423,614,405,477,505,635,920,876,929,024,000,000.00 a RD\$60,847,228,810,955,011,271,841,753,858,048,000,000.00
- De RD\$60,847,228,810,955,011,271,841,753,858,048,000,000.00 a RD\$121,694,457,621,910,022,543,683,507,716,096,000,000.00
- De RD\$121,694,457,621,910,022,543,683,507,716,096,000,000.00 a RD\$243,388,915,243,820,045,087,367,015,432,192,000,000.00
- De RD\$243,388,915,243,820,045,087,367,015,432,192,000,000.00 a RD\$486,777,830,487,640,090,174,734,030,864,384,000,000.00
- De RD\$486,777,830,487,640,090,174,734,030,864,384,000,000.00 a RD\$973,555,660,975,280,180,349,469,061,728,768,000,000.00
- De RD\$973,555,660,975,280,180,349,469,061,728,768,000,000.00 a RD\$1,947,111,321,950,560,360,698,938,123,457,536,000,000.00
- De RD\$1,947,111,321,950,560,360,698,938,123,457,536,000,000.00 a RD\$3,894,222,643,901,120,721,397,876,246,915,072,000,000.00
- De RD\$3,894,222,643,901,120,721,397,876,246,915,072,000,000.00 a RD\$7,788,445,287,802,241,442,795,752,493,830,144,000,000.00
- De RD\$7,788,445,287,802,241,442,795,752,493,830,144,000,000.00 a RD\$15,576,890,575,604,482,885,591,504,987,660,288,000,000.00
- De RD\$15,576,890,575,604,482,885,591,504,987,660,288,000,000.00 a RD\$31,153,781,151,208,965,771,183,009,975,320,576,000,000.00
- De RD\$31,153,781,151,208,965,771,183,009,975,320,576,000,000.00 a RD\$62,307,562,302,417,931,542,366,019,950,641,152,000,000.00
- De RD\$62,307,562,302,417,931,542,366,019,950,641,152,000,000.00 a RD\$124,615,124,604,835,863,084,732,039,901,282,304,000,000.00
- De RD\$124,615,124,604,835,863,084,732,039,901,282,304,000,000.00 a RD\$249,230,249,209,671,726,168,464,079,802,564,608,000,000.00
- De RD\$249,230,249,209,671,726,168,464,079,802,564,608,000,000.00 a RD\$498,460,498,419,343,452,336,928,159,605,129,216,000,000.00
- De RD\$498,460,498,419,343,452,336,928,159,605,129,216,000,000.00 a RD\$996,920,996,838,686,904,673,856,319,210,258,432,000,000.00
- De RD\$996,920,996,838,686,904,673,856,319,210,258,432,000,000.00 a RD\$1,993,841,993,677,373,809,347,712,638,420,516,864,000,000.00
- De RD\$1,993,841,993,677,373,809,347,712,638,420,516,864,000,000.00 a RD\$3,987,683,987,354,747,618,695,425,276,841,033,728,000,000.00
- De RD\$3,987,683,987,354,747,618,695,425,276,841,033,728,000,000.00 a RD\$7,975,367,974,709,495,237,390,850,553,682,067,456,000,000.00
- De RD\$7,975,367,974,709,495,237,390,850,553,682,067,456,000,000.00 a RD\$15,950,735,949,418,990,474,781,701,107,364,134,912,000,000.00
- De RD\$15,950,735,949,418,990,474,781,701,107,364,134,912,000,000.00 a RD\$31,901,471,898,837,980,949,563,402,214,728,269,824,000,000.00
- De RD\$31,901,471,898,837,980,949,563,402,214,728,269,824,000,000.00 a RD\$63,802,943,797,675,961,899,126,804,429,456,539,648,000,000.00
- De RD\$63,802,943,797,675,961,899,126,804,429,456,539,648,000,000.00 a RD\$127,605,887,595,351,923,798,253,608,858,913,079,296,000,000.00
- De RD\$127,605,887,595,351,923,798,253,608,858,913,079,296,000,000.00 a RD\$255,211,775,190,703,847,596,507,217,717,826,158,592,000,000.00
- De RD\$255,211,775,190,703,847,596,507,217,717,826,158,592,000,000.00 a RD\$510,423,550,381,407,695,193,014,435,435,652,317,184,000,000.00
- De RD\$510,423,550,381,407,695,193,014,435,435,652,317,184,000,000.00 a RD\$1,020,847,100,762,815,390,386,028,870,871,304,634,368,000,000.00
- De RD\$1,020,847,100,762,815,390,386,028,870,871,304,634,368,000,000.00 a RD\$2,041,694,201,525,630,780,772,057,741,742,609,268,736,000,000.00
- De RD\$2,041,694,201,525,630,780,772,057,741,742,609,268,736,000,000.00 a RD\$4,083,388,403,051,261,561,544,115,483,485,217,473,472,000,000.00
- De RD\$4,083,388,403,051,261,561,544,115,483,485,217,473,472,000,000.00 a RD\$8,166,776,806,102,523,123,088,230,966,970,434,946,944,000,000.00
- De RD\$8,166,776,806,102,523,123,088,230,966,970,434,946,944,000,000.00 a RD\$16,333,553,612

(2) Material Damage and Overall Loss to the Economy

- Agricultural damage was calculated at 354 million pesos, or 37 percent of total losses with great destruction of plantation crops and irrigation systems. Approximately four years will be required to recover pre-hurricane production levels.
- Housing losses were estimated at over 80 million pesos; an estimated 100,000 houses were affected, especially in the loss of roof structures. Some of the most affected zones include part of the National District, the Provinces of San Cristobal and Peravia, San Jose de Ocoa, Padre Las Casas, San Juan de la Maguana, Santiago and the Province of La Vega.
- Basic infrastructure losses including irrigation systems, hydroelectric plants and distribution systems, roads, energy sources and communications were estimated at more than 100 million pesos.
- Education was affected both directly and indirectly by the disaster. An estimated 15,750 classrooms were damaged (85 percent of the total in the affected area). After the disaster, many



schools were utilized as refugee areas after the storms, thus further affecting the normal educational processes.

- Health facilities in the affected area received moderate damage whose repair was estimated at RD\$1.6 million.
- Industrial losses were estimated at RD\$85 million, with over 200 specific industries reporting heavy damage both in installations as well as prime materials. Furthermore, industrial production remained paralyzed for over two months causing losses estimated at RD\$75 million.
- Commerce suffered considerable damage throughout the zone. An estimated 75 percent of the total losses of about RD\$20 million corresponded to loss of existing inventories.

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### III. THE RESPONSE OF THE GOVERNMENT OF THE DOMINICAN REPUBLIC

Immediately after the hurricanes, the Government of the Dominican Republic (GODR) took steps to focus and coordinate the emergency relief and assistance efforts of local, national and international agencies -- public and private -- in the areas of food, clothing, medicine, etc.\* The Instituto Nacional de la Vivienda (INVI) was made responsible for emergency efforts in the housing sector.

The immediate actions of INVI were guided by the following criteria:

(1) Reconstruction efforts were to be a joint responsibility of both private and public sectors. The government efforts should be directly related to and coordinated with the efforts of the affected communities and their institutions.

(2) Reconstruction efforts should be carried out simultaneously with ongoing productive activities.

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\* The scope of this evaluation report is limited to efforts within the housing sector.

(3) Reconstruction should be carried out as part of long-term national upgrading and development activities.

The following requirements were established with respect to the participation of affected households:

(1) Have suffered the total or partial destruction of their house or dwelling unit.

(2) Lack of economic resources with which to reconstruct their houses.

(3) Willingness to contribute materials and self help in the reconstruction of their house.

Within the context of national emergency efforts, INVI identified four action programs which were to take place in two stages: Stage I -- The Emergency Stage during which work was to be focused on repairing roofs and minor damage which would serve to make housing habitable for affected families; and Stage II -- The Reconstruction Stage which would consist of efforts to construct or reconstruct housing for refugees located in special facilities (see Figure 1 for a summary description of the stages).

FIGURE 1

INVI Post Hurricane Housing Repair and Reconstruction Program  
September 1, 1979 - June 30, 1980

Province	GENERAL TOTALS		STAGE I: EMERGENCY Program I: Repair of Roof & Minor Damage	STAGE II: RECONSTRUCTION		
	Investment (thous.RD\$)	No. of Houses Reconstructed		Program II: Recon- struction & Repair of Major Damage	Program III: Barracks Housing Development	Program IV: New Housing Development
Distrito Nacional	2,226	5,089	3,000	289	1,800	
San Cristobal	1,534	18,019	4,500	12,889	294	336
Peravia	2,116	17,275	5,000	10,469	220	1,586
Azua	10	64	.		64	
San Juan de la Maguana	92	100			100	
La Vega	37	65		65		
Sanchez Ramirez	21	82		82		
COUNTRY TOTAL	6,101	40,694	12,500	23,794	2,478	1,922

A. STAGE I: EMERGENCY EFFORTS

1. Program 1: Repair of Roofs and Minor Damage

Building damage was categorized in two ways: damaged or destroyed. A large majority of the first category consisted of damaged roofs and broken walls. The repair of damaged housing was immediately confronted with a materials supply problem (zinc and asbestos cement sheets, wood and nails).

As a basic objective for this work, INVI proposed to (1) rehabilitate a minimum section of each house in order to make it habitable; (2) offer employment to the large quantity of people whose economic activities were paralyzed; and (3) try to recover and make maximum utilization of the materials from previous housing which was damaged or destroyed.

A summary of the results of this program shows the following:

- The majority of the work was concentrated in three of the most affected areas: the National District and the Provinces of San Cristobal and Peravia which were divided into 20 zones attended by 1,038 special work brigades organized by INVI.
- A total of 12,500 houses were repaired and distributed as follows:

-- 4,000 in Santo Domingo

- 3,200 in Haina
- 5,700 in San Cristobal
- 6,000 in Bani

- The total investment in this Stage I program was RD\$700,000 (see tables).

In carrying out this first stage program, INVI recruited and made extensive use of the available human resource pool, both technical and non-technical. The human resources employed included: 150 persons from INVI (the total INVI personnel); 1,557 contracted laborers (master builders and helpers for the brigades), as well as technical resources from a variety of private and public institutions -- Public Works (SEOPC); the College of Architects and Engineers (CODIA); the University of Santo Domingo (USAD); the Office of Community Development (ODC); the National Housing Bank (BNV); the Institute of Assistance and Housing (INAVI); and National Lands (BN). A total of 125 technical personnel were utilized in addition to the residents of areas to be served. The total participation of community residents was estimated at 28,350 persons by INVI. All of these resources were organized into the previously mentioned 1,038 work brigades which were distributed as follows: San Cristobal -- 330 brigades; Santo Domingo -- 330 brigades; Haina -- 230 brigades; and Bani -- 230 brigades.

INVI estimates that the program generated approximately 3,100 man-months of employment which somewhat alleviated the economic dislocation caused by the disaster.

B. STAGE II: RECONSTRUCTION

In November 1979, the second stage of reconstruction began. This was directed at the reconstruction of existing housing and the construction of new housing and included three additional programs:

2. Reconstruction of housing and repair of major damage.
3. Construction of row housing (barracks) for refugees.
4. Construction of housing and community development activities.

These programs were organized and executed by a special purpose unit set up within INVI (Unidad de Emergencia).

1. Program 2: Reconstruction and Repair of Major Damage

The principal objective of this program was directed at the relocation and rehousing of refugees still located in schools, hospitals and other non-housing facilities. The basic elements or sub-programs included: (1) structural repairs of housing in precarious and dangerous conditions; (2) reconstruction of walls, roofs and partitions; and (3) construction of new housing. Under this program, a total of 23,794 solutions were developed.



2. Program 3: Row Housing (Barracks)

The principal objective of this program was to relocate refugees living in public facilities, who were not property owners, by providing a series of barracks housing (see drawing). The program was carried out in Santo Domingo, San Cristobal, Haina, Bani and San Juan de la Maguana. A total of 2,478 units were constructed.

3. Program 4: Reconstruction and Development

After the hurricane, a great number of national and foreign private non-profit institutions offered their assistance to INVI. Their efforts were focused through this program which took as its principal objective the construction or reconstruction of small population clusters or towns on the basis of integrated development activities in housing and social-economic and community development.

INVI signed working agreements with the following groups:

- Christian Disaster Relief and the Dominican Red Cross.
- Comité Pro Ayuda Bani and Care (2).
- Comité Pro Reconstrucción de Juan Baron and the Mennonite Central Committee.
- Junta Pro Desarrollo de San Jose de Ocoa.
- Comité Pro Ayuda de Bani.

In these efforts, work was carried out jointly by the private non-profit groups, INVI and the community to be served. A total of 1,922 houses were constructed or reconstructed under this program -- 1,586 in the Province of Peravia and 336 in San Cristobal.

C. COMMUNITY PARTICIPATION AND INSTITUTIONAL DEVELOPMENT

The donations of work, materials and most importantly the contribution and participation of the refugee families themselves was critical to INVI's reconstruction task. INVI estimates that a total of 28,350 person-days of labor with a value of \$2,800,000 were constructed by community groups and individuals. An additional RD\$5,000,000 in materials was contributed by community groups. Beyond that, of course, are the benefits, both short- and long-term, of the community self-help programs which can now provide the bases for other productive activities.

As INVI's efforts developed during the first and second stages of work, an inter-institutional group representing both the public and private sectors was formed under its leadership to coordinate reconstruction efforts, share information and generally come to terms with the need for a long-term effort in housing for low income families, particularly rural. This group -- the Comision Interinstitucional de las Viviendas (CII-Viviendas) now has permanent status and has the following

functions: (1) discuss and establish mechanisms which are responsive to the demand for low income housing; (2) develop integrated housing programs linked wherever possible to productive educational and community development activities; and (3) develop and share information on funding, technology and procedures and methodologies which are relevant to the above-mentioned functions.

The following institutions are founding members of the CII-Viviendas: INVI; Public Works and Communications (SEOP); the Community Development Office (ODC); the Central Bank; the Dominican Agrarian Institute (IAD); the Dominican College of Architects and Engineers; the Dominican Development Foundation (DDF); Social Services of Dominican Churches (SSID); the San Jose Foundation; CARE; Catholic Relief Service (CRS); the Association for the Development of San Jose de Ocoa; the Office of Construction for North Bani; and Caritas of the Dominican Republic.



#### IV. AID HOUSING RELIEF RESPONSE

AID's Emergency Housing Disaster Relief Program evolved generally from its initial conceptualization in October-November 1979. Based on a rapid analysis of the existing needs and the GODR response in Housing, the USAID/DR initially decided to channel housing repair grants through six Private Voluntary Organizations (PVO's). A total of \$538,000 was spent on 1,963 solutions under the PVO program. Later, the program expanded by initially channeling home repair grant funds through INVI (\$326,500 during July-August 1980). Finally in its last stage funds were granted to INVI to construct a basic low cost core unit (\$1,420,000 in September 1980). Figure 2 illustrates the chronological development of AID's Emergency Housing Program. The Program's gradual development over a full year presents certain difficulties with respect to evaluation, especially since the INVI portion of the program is just becoming operational as of October 1980. As of September 30, 1980, less than 30 percent of total budgeted program funds had been disbursed. For these reasons, the bulk of the present evaluation concentrates on the AID/PVO Emergency Housing Program. A brief description will also be presented for the INVI component of the program.

FIGURE 2

USAID Emergency Housing Disaster Relief Funds

Agency	Budgeted Amount	Disbursed Amount	Houses to be Repaired/Reconstructed	Houses Repaired/Reconstructed	Repair/Reconstruction in Process
CARE	\$ 130,000	\$130,000	595	595	0
Servicio Social de Iglesias Dominicanas, Inc. (SSID)	129,000	129,000	355	355	0
Southern Baptist Mission of the Dominican Republic	3,000	3,000	22	22	0
American Inst. for Free Labor Development (AIFLD)	50,000	50,000	430	430	0
Dominican Development Foundation (DDF)	150,000	135,000	477	438	39
Catholic Relief Service (CRS)	76,000	50,000	84	20	64
Instituto Nacional de la Vivienda (INVl)	290,000 <sup>1</sup>	108,000	873	151	N.A.
Instituto Nacional de la Vivienda	36,500 <sup>2</sup>	36,500	N.A.	N.A.	N.A.
Instituto Nacional de la Vivienda	<u>1,420,000</u>	<u>0</u>	<u>930</u>	<u>0</u>	<u>0</u>
TOTAL	\$2,284,500	\$641,500	3,766	2,011	103

## NOTES:

<sup>1</sup> This budgeted amount of \$290,000 includes \$70,000 which is the estimated value of 20,000 sheets of roofing and 7,000 feet of ridge rolls donated in kind to INVl.

<sup>2</sup> This budgeted amount of \$36,500 is the estimated value of 50,000 pounds of nails donated in kind to INVl.

## SOURCE:

PADCO Elaboration of USAID/Dominican Republic Statistics.

A. CONTEXT FOR THE DEVELOPMENT OF AID'S  
EMERGENCY HOUSING PROGRAM

In order to understand the how and the why of AID's Emergency Housing Program, the Mission's shelter relief response to Hurricane David and Tropical Storm Frederick must be placed within the context of the development of its overall disaster relief effort. The AID Mission began to anticipate the destructive potential of David and began to organize its overall disaster relief program four to five days before David struck the Dominican Republic on August 29, 1979. The initial emphasis was on the availability of foodstuffs. An inventory of available commodities was undertaken by the Mission's Disaster Relief Officer.

After an initial period of two to three days following the hurricane, during which time it was difficult to assess the full impact of David due to an almost complete breakdown in communication with the affected areas, the GODR Ministry of Defense convened a meeting of appropriate organizations on September 3, 1979 (GODR ministries, Civil Defense, AID Disaster Area Survey Team (DAST), etc.) to assess the damage caused by the hurricane. The following sectors were considered of priority concern for the initial disaster relief efforts:

- Health concerns relating to the drinking of contaminated water and to wind caused injuries;
- The availability of foodstuffs;

- The disruption in the affected area's transportation and communication networks (roadways, bridges, telephone links, ports, etc.).

While the Mission's DAST team was in the process of assessing the wind damage caused by David through the use of up to 19 helicopters, Tropical Storm Frederick hit the island on September 6th. Rapidly becoming aware of the extent of wind and flooding damage caused by the two tropical storms, the Mission changed its focus from one of damage assessment to immediate disaster relief. Much relief assistance in the form of food, clothing and medical supplies was subsequently airlifted into the affected areas. The Ambassador's \$25,000 Special Fund was promptly allocated for emergency disaster relief.

Within 48 hours after Frederick had crossed the island, it became apparent to those reporting in from the affected areas that a lack of adequate shelter was a major concern. At the same time, offers of shelter assistance from many different PVO's in the United States were pouring into the country. The Mission Director channeled this relief aid (in the form of roofing materials, roles of plastic, etc.) over to the appropriate PVO or government agency for distribution. The Mission also contacted the AID Disaster Relief Office (OFDA) in Washington to place an order for tents, generators and other immediate needs. Over 300 tents, including flies, were delivered to the Dominican Republic; these, in turn, were distributed by the Dominican Army and the Peace Corps to the neediest families.



As the Mission's immediate shelter relief efforts were winding down in late September and early October, it became apparent (from discussions with INVI and the PVO's with whom AID was working on food distribution programs) that an additional medium-term emergency reconstruction program was required in the areas most affected by David and Frederick.

In early October, word came from Washington that an amount of supplemental disaster funds would be made available by the U.S. Congress to assist in the reconstruction effort. An amount of \$21 million was initially discussed, with \$15 million eventually becoming available. This \$15 million was to be allocated in the following manner:

- \$7 million for the repair of energy generating facilities;
- \$5 million for the restoration of the transportation and communication network;
- \$3 million for food, assistance to small farmers and housing.

The AID Mission, in conjunction with short-term consultants, moved rapidly to identify the medium-term (1-2 years) emergency shelter needs, as well as to evaluate alternative means of channeling assistance and grant funds.

In this regard, AID made contact in early October with the Banco Nacional de la Vivienda (BNV) and the Instituto Nacional de la Vivienda (INVI) concerning potential disaster reconstruction working relationships. By this time, INVI was already well into its own Emergency Repair Program (based on construction brigades) in most of the affected areas including Santo Domingo. BNV had decided to take no direct role in disaster relief or reconstruction. Based on the massive organizational efforts required of INVI in its own emergency program, both INVI and AID concluded that the additional administrative and organizational inputs demanded from an AID financed program on the part of INVI were not feasible at that time.

However, based on estimated needs, INVI proposed that AID institute a comprehensive shelter relief program of its own which would include urban repair assistance in the form of 15,000 housing repair kits, including zinc roofing panels, lumber, cement and nails. The total cost of each package was estimated at RD\$150, including RD\$17 for labor. In the rural areas, INVI proposed that AID consider financing 8,000 packages at an estimated cost of RD\$125 per package, including RD\$12 for labor.

In addition, discussions were held concerning the financing of 3,000 multi-family "barracks" housing (barracones). Finally, INVI discussed the need to finance 2,000 new core houses in rural areas at an estimated cost of RD\$1,500 each. INVI envisaged the complete urban/rural housing reconstruction program would cost approximately RD\$8 million.

During these discussions with INVI and as a result of its frequent contacts with local PVO's, AID's policy and objectives with respect to an emergency housing reconstruction program began to evolve. Tempered by these discussions and the fact that the Mission did not have a large quantity of grant funds with which to work, the Mission decided to work in the rural areas most affected by the tropical storms and to finance a building materials repair package instead of constructing finished low cost units. Since it was agreed initially that INVI was not prepared to take on the added burden of an AID program, AID turned to the PVO's with whom they already had developed an excellent working relationship based on the emergency food distribution program. The PVO's were well-established in the affected rural areas. They were working closely on disaster relief efforts with community based organizations which were either set up by them or with whom they were working in affiliation. The PVO's knowledge of the affected rural areas met AID's geographic and sectoral criteria. The following six PVO's agreed to work with AID on its Emergency Housing Program:

- CARE;
- Servicio Social de Iglesias Dominicanas, Inc. (SSID);
- Southern Baptist Mission of the Dominican Republic;
- American Institute for Free Labor Development (AIFLD);

- Dominican Development Foundation (DDF);
- Catholic Relief Service (CRS).

In selecting the PVO's through which to channel its funds for an Emergency Housing Program, AID felt it was obtaining a very reputable and accountable implementation instrument which would require little of its own efforts in establishing the vehicle for the distribution of building materials in the affected areas. This provided AID with an administrative structure that had access, through ongoing food and clothing relief programs, as well as trained staff, to reach the rural poor where disaster had struck the hardest.

Had AID chosen to go through organizations with whom they had had little previous experience, a greater amount of AID staff time would have been required to administer and monitor the program. Furthermore, AID recognized that each of the selected PVO's had well-established internal auditing procedures which would potentially permit further increased rapid and effective action in the channeling and utilization of grant funds. This would permit AID to maintain financial control over program funds without having to impose outside monitoring controls over these relatively small organizations. Within broad program guidelines, AID allowed each PVO to develop its part of the emergency program on the basis of its own operating procedures and by-laws.

B. PROGRAM POLICIES AND OBJECTIVES

1. Goal

The implicit goal of the AID Emergency Housing Program was to work through six PVO's in order to repair and rebuild dwelling units in the areas most affected by Hurricane David. The Program was organized in order to solve a perceived serious health and refugee problem. It was felt that the affected households required substantial and immediate assistance if continued suffering and large-scale rural-urban migration were to be avoided. It was envisaged that channeling assistance through the PVO's would have, through their contacts with community organizations, special outreach capabilities, particularly in rural areas.

This goal of channeling funds through the six PVO's has been essentially achieved in the initial \$538,000 phase of the program. With the exception of 102 housing solutions in the process of completion (out of a total figure of 1,963 solutions), including the 64 core units in the CRS Arroyo Canas project, the first phase of the housing repair program has been completed as of September 30, 1980.

As mentioned in the introduction to the present section, the organizational vehicle for the implementation of AID's program has evolved greatly during the program's first year. During the implementation of the \$538,000 first phase from late November

1979 through June-July 1980, the relatively slow disbursement of AID grant funds facilitated the use of the PVO's as the program's implementing agents. During this period, INVI was undergoing substantial institutional changes. A new director and sub-director were in the process of refocusing INVI's housing policy from one of producing middle income housing to one of coordinating the production of and producing appropriate low income housing solutions. In this capacity as the institution responsible for the coordination of low income housing production, an Inter-institutional Housing Commission was formed with INVI as its head. Many of the PVO's already working with AID on its Emergency Housing Program (DDF, SSID, CARE and CRS) were also named as members of this commission. When large quantities of zinc roofing sheets, capping and construction nails became available to AID at the end of July 1980, it was decided to channel these materials and an additional \$220,000 to complement and speed the materials use in the emergency repair efforts through INVI. This departure from previous Mission policy was based on the belief that the PVO's who still wished to participate in AID's program could not handle such a large quantity of materials and grant funds. The emerging position of INVI as the coordinating agency for all Dominican Republic low income housing activities also played a major role in AID's decision. When an additional \$1.4 million became available in early September 1980 for the construction of new core housing solutions for low income households in the areas most affected by the tropical storms, it was only logical to channel these funds also through INVI.

In summary, while the vehicle for the implementation of AID's Emergency Housing Program has evolved from the PVO's to INVI during the first year of program implementation, the goal to repair and construct shelter solutions for those households most affected by the hurricane remained the same.

## 2. Purpose

The implicit purpose of the AID Emergency Housing Program was to work in coordination with six PVO's to repair and rebuild rural homes destroyed or badly damaged by the tropical storms David and Frederick. Eighty percent of the affected dwellings were located in the country's southcentral provinces west of Santo Domingo. The PVO's which participated in the program were, to a large extent, selected on the basis of their past "track record" of having established excellent working relationships with a wide range of community organizations based in the rural sectors of the areas most affected by the tropical storms. Reviewing the first year of program implementation, the PVO's have, in fact, performed their duties admirably. As of September 30, 1980, \$538,000 in AID grant funds have been disbursed. This figure represents over 1,950 families benefitted. Assuming six persons per family, the number of direct program beneficiaries approaches 12,000 persons.

### C. PROGRAM COMPONENTS

The evolution of AID's Emergency Housing Program since its inception in late November 1979 can be roughly divided into three phases: (1) the AID/PVO Materials Package Phase; (2) the AID/INVI Zinc and Nails In-kind Donation and Housing Repair Phase; and (3) the AID/INVI Basic Core House Construction Phase. Since the last two phases are just now in the early stages of implementation, this section will deal primarily with the evaluation of the AID/PVO program. A brief description of all three major phases will, however, be presented. Additional details concerning the characteristics of each of the individual PVO reconstruction efforts under the AID grant program are provided in Annex I.

#### 1. AID/PVO Materials Package Program

This component of AID's Emergency Housing Program was designed to channel grant funds to six PVO's in order to finance home repair activities in the hurricane affected area. How this program developed, with its corresponding goals and purposes, has been discussed in the previous two sections. Since AID respected the organizational and operational integrity of the six PVO's, there are slight variations with respect to the way each PVO developed its part of the program. The main focus of the present section is to give the specific details of how each PVO developed its own program. However, before embarking on the description of each individual program, it is possible to outline the broad



general framework for this phase of AID's Emergency Housing Program to which all PVO's adhered.

The AID/PVO program involves the distribution of a building materials package through a subsidized sale delivery mechanism. The program envisaged the purchase of a materials package and the payment of technical support and the payment of transportation and operating costs related to program development. Transportation and operating costs were not to exceed 10 percent of the total cost of materials and technical support. The materials were distributed individually by each PVO through its affiliated network of service agencies in the affected areas. The rural sections served by each service agency necessarily focus on the areas served by the AID program within the affected zone. Each PVO signed an AID grant project agreement. After signing this agreement, the PVO was given an advance by AID to purchase a certain quantity of building materials. The materials package included wood for the damaged unit's structure and rafters, corrugated zinc roofing sheets and nails. Leeway was also given the PVO's to purchase cement, concrete blocks and hand tools.

All materials were purchased locally by the individual PVO's. The purchased materials were either transported to the PVO's Santo Domingo warehouse for later distribution (as in the case of CARE) or were distributed directly to the cooperating service agency. Materials were transported either by the local suppliers or by a local private transport firm.

Community promotion and beneficiary selection are the responsibility of the PVO's field supervisor and the service agency manager. With the support of the community, each service agency was to undertake a survey of individual household needs. From this assessment, a master list indicating the potential beneficiary's name, identity card number and estimate of materials required was assembled. Through a series of visits and discussions with the affected households and the service agency manager, the program's beneficiaries were selected. With the exception of the service agencies working with SSID, all other service agencies chose the program beneficiaries from among their existing membership.

It was decided early in the program that the financial resources of the affected families was very limited. Therefore, the possibilities for short- or medium-term recovery of the materials costs were not good. Each service agency made an assessment of the repayment capacity of the program beneficiaries in its area. Most service agencies decided to collect a minimal initial quota of RD\$10-20 for the materials package. On payment of this token sum, the entire package was handed over. Actual recovery of the outstanding balance has only recently begun to be organized at the level of the service agency. The percentage of total package cost to be recuperated will certainly vary greatly by service agency. It will probably range from a low of approximately 10 percent to a high of 50 percent. There exist strong doubts as to whether cost recovery will actually take place because of the time required to return to normal

agricultural yields following the damages caused by David and Frederick in the rural zones.

Actual repair/construction will be the responsibility of the individual beneficiary. It was assumed by AID and the individual PVO's that the materials supplied under the program would not be sufficient to build a complete house. The package represented a starter kit by which the beneficiary could begin to rebuild his or her dwelling and which would complement materials salvaged from the previous dwelling or be complemented by materials purchased subsequent to the AID program.

Different incentives were used by the PVO's to induce the beneficiaries to erect a shelter with the materials package provided by AID. Some service agencies formed work brigades to assist in the repair program. Others provided technical assistance in the form of "maestros de obra" to assist the beneficiaries and/or the work brigades in the reconstruction process. The "maestro de obra" generally provided assistance during difficult stages of construction (i.e., the laying of concrete blocks or the erecting of roof rafters) or in the case where the entire dwelling unit was destroyed he would provide direction in the design of the new structure (the timber post and rammed concrete exterior wall, tied together with barbed wire, seemed to be the preferred method of most "maestros"). It was also envisaged in many cases that the "maestro" would stimulate a rapid utilization of the repair packages.

Funds collected from the beneficiaries through the sale of the materials packages were deposited in a bank account in a bank

near the community. The use to be made of these funds was to be jointly decided by the service agency and the beneficiaries. It is envisaged that the funds will be used either for community projects or, more likely , for the purchase of additional building materials. With the exception of a few service agencies, very little money has been collected to date.

2. AID/INVI Zinc and Nails In-Kind Donation and Housing Repair Program

This phase of AID's Emergency Housing Program included the donation of 20,000 sheets of galvanized zinc roofing, 7,000 feet of ridge roles and 50,000 pounds of nails to INVI. The estimated value of this in-kind donation totaled \$106,500. With this material and an additional sum of \$220,000 in AID grant funds, INVI envisages being able to continue its housing reconstruction program in the rural zones of the Provinces of San Cristobal and Peravia. This phase contemplates the completion of several repair programs which, due to the severity of the damage, have been stopped for lack of sufficient funds.

This program will assist in the repair of the houses of the neediest families in the affected rural areas. INVI and several PVO's will supervise the distribution of the building materials and the technical assistance support provided by the grant funds donated by AID.

3. AID/INVI Basic Core House Construction  
Program

This phase of AID's Emergency Housing Program will provide a basic core shelter for the poor affected by Hurricanes David and Frederick who are still living in sub-standard housing.

Project activities will be undertaken in the Provinces of Azua, Peravia, San Cristobal and the western and northern portions of the National District, with the exception of Santo Domingo.

Based on AID experiences gained to date in its Emergency Housing Program, three minimal core house models have been selected for financing under the program. It has been agreed that the houses to be constructed with the funds donated by AID will cost up to RD\$1,400 each, including latrines, materials, transport, skilled labor and INVI direct supervisory costs. The costs of the land, site preparation and water services will be borne by GODR. Self-help by the beneficiaries will be encouraged to the maximum degree.

It is expected that approximately 930 units will be built under this grant program of \$1.4 million.

All houses, whether built on individual sites or in projects, will include latrines. In the case of projects, INVI will supply water to the program beneficiaries.

INVI has tentatively identified six communities for program activities. In five, there will be projects and in one a program of individual houses on scattered lots.

The program will attempt to make maximum use of self-help participation in planning activities and in construction both to promote community identification with and support for the program and also to reduce costs. In addition, INVI will encourage the participation of PVO's for implementation of activities within the framework of the program.

## V. CONCLUSIONS AND RECOMMENDATIONS

In the Dominican Republic after the destruction of David and Frederick, a large gap existed between the actual damages and the donations and the relief and reconstruction of assistance agencies, the Government of the Dominican Republic, the private sector as well as the beneficiaries. The institutional response represented only a small portion of total need. Most significant, however, was the fact that abilities of the participating groups and agencies, international, national and local, grew considerably as a result of the experience. While the state of preparedness left something to be desired, it is also true that the rapid though rather hectic immediate mobilization of national human and financial resources committed to helping in the post-hurricane efforts provided the essential base for the progressive development of the systems needed provide more efficient utilization and coordination of all available resources. Over the year following the disaster, the technical and management ability and maturity of the institutions, their personnel and the community itself was greatly enhanced and developed extensively as a result of the post-hurricane relief and reconstruction processes.

Nevertheless, the experiences of this evaluation indicate that both the GODR and USAID should move rapidly to effectively build upon the knowledge gained through their recent experience in order to be better prepared in the future.

A. LESSONS LEARNED -- THE GENERAL CONCLUSIONS

1. Policies and Objectives

(a) Needs Assessment. Immediately after the disaster in the Dominican Republic, there was a major need to develop a process for assessing the damage. INVI participated in the GODR assessment effort under the Emergency Committee organized by the President. A major role in the government's assessment was played by the National Statistics Office (ONE) which designed and implemented a census of population and housing in the Provinces of Peravi and San Cristobal in October and November 1979. In the private sector, individual PVO's working through their constituencies carried out rapid assessments of needs. The AID DAST Team also carried out a general visual field assessment of needs early on.

Despite these efforts, almost all immediate action programming was necessarily based on incomplete and sometimes unclear perceptions of the needs. Many well-meaning agencies and individuals were very quickly in the field trying to be "helpful," but without any immediate coordination of efforts based on a common perception of needs. Largely due to the lack of adequate prior preparation, very little consideration could be given to long-term needs in the period immediately following the



disaster, or to a review of alternate approaches and the related processes involved in housing construction. Although the rapid involvement of the PVO's in both public and private sector efforts did provide the firm basis for identifying the total needs of individual and community constituencies throughout the post emergency effort, initial estimates of damages often seemed quite exaggerated.

The following conclusions seem appropriate:

- (i) Surveys to determine need should be diagnostic and directed as much as possible to the specific needs of the individuals affected. This means that the number solutions must be viewed in terms of what it does from throughout its process of realization and should be related to and integrated with othr needs.
- (ii) The major organizational and coordination effort required to get personnel mobilized to survey needs and tabulate information at the local level should be planned in advance in terms of the participants and their roles, the standard formats which are to be utilized, and transportation and logistics needs.
- (iii) The requirement for centralized review and interpretation of needs must be balanced with those assessments and actions directed at localized needs. In the Dominican Republic, this balance emerged through

the eventual informal assignment of geographic areas of responsibility to both government agencies and PVO's. Eventually this constituency based approach tended to permeate all parts of the program and allowed for actions which went beyond the immediate housing needs to a concept of total community needs based on the unique characteristics and capacities of each community. Needless to say, in some cases however, assistance efforts by one or another agency emphasized particular aspects which corresponded to the assistance which the agency could provide.

(b) The Policy Framework. As the needs of the population became clarified in the Dominican Republic, a variety of parameters affected the planning and implementation of disaster relief efforts in housing. Among the most important of these were: (a) the economic conditions of the country; (b) the GODR disposition and development policies; (c) the ongoing GODR housing policies; (d) the normal ongoing decision making relationships; and (e) the key participants (personalities) and their relationships.

Since many of the decisions to be reached after Hurricane David and Tropical Storm Frederick were based on the establishment of communication between the victims and assistance agency personnel, as well as between them and government personnel, it is clear that the historical socio-political relationship between these groups was also quite important.

Equally important was coordination between the various participants and the understanding cross-cultural understanding of the international donor agencies.

As the current national administration entered office in August 1978, the Dominican economy faced considerable difficulties. The GODR disposition and development policies prior to the hurricane were clearly oriented about the need to "retool" the national economy, increasing economic productivity while achieving a more equitable distribution of its benefits to the low income households (particularly the rural poor who had largely remained marginal to previous economic development efforts).

Within this context, the post-disaster plans and actions of the GODR were designed and directed to the development of a wide series of coordinated actions not only to promote the effective recovery of the affected zones of the country but also to include a series of initiatives which were directed at the medium and long-term economic and social development of such zones.

Thus, the development of a two-year National Investment Program for 1981 and 1982 (already underway when David struck) became a major focus for the identification of immediate investments and actions in the south-central region (the most affected zone) which would serve both immediate and long-term needs.

However, at the time of the hurricane, the GODR was steadily reviewing and reevaluating the role and the contribution of the construction sector to the economy. Primary emphasis for public

sector housing investments was being placed on the need to make the limited government investment which was available more responsive to the needs of low income households. No formal broad based national housing policy existed. Rather, INVI, the National Housing Institute, was attempting to complete construction of housing projects started by the previous administration while simultaneously beginning to formulate new plans and projects more in line with the GODR's intention to increase the production of housing solutions which were more affordable for the lowest income levels.

In synopsis, while the basic parameters for GODR action in housing had been set, the development of the required technical, human, institutional and financial resources to support the emerging housing policies was only at an incipient stage. Thus, also, the normal circumstances for the decision making in the housing production process were already in a state of flux at almost every level. Therefore, in the Dominican Republic, the post-hurricane relief and reconstruction efforts in housing were not unlike the task of trying to overhaul the transmission system of a race car during the brief pit stops in the middle of a major international gran prix race. No easy task.

The situation within the USAID Mission to the Dominican Republic was little different. A new Mission Director had only recently arrived in the country. The Mission did not have a

long-term shelter strategy nor program prior to Hurricanes David and Frederick striking the Dominican Republic.\* During the post-disaster efforts in housing, the nature of the disbursement schedule in separate tranches led to an evolution in emergency housing shelter solutions and the development of a rudimentary Mission housing strategy. The initial shelter activities towards which AID funds were directed were home repair packages.

Immediately following the disaster, AID's priorities were focused on repairing damaged dwelling units in the affected areas. As new monies became available, AID began to view the emergency housing issue more in terms of a medium-term reconstruction program. They approved funding for PVO's to build basic core units in their target areas, as well as encouraging other PVO's to investigate the possibility of developing permanent shelter construction programs.

USAID/DR also requested the assistance of DS/H Washington in carrying out a Shelter Sector Assessment for the country in order to guide its future efforts in housing and urban and regional development. This work was completed in April 1980 and contained recommendations for AID's continuing involvement with INVI and the PVO's.

Later, in mid-1980, when a larger tranche of grant funds became available for the Emergency Housing Program, the AID

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\* Significantly, a newly assigned Housing and Urban Development officer arrived one week after the hurricane. A new Deputy Mission Director also arrived about the same time.

Mission made the decision to channel these funds through INVI which at that time appeared to AID to be the only institution in the Dominican Republic with the administrative capacity in low income housing to absorb such a large sum. This change in the Mission's Emergency Housing Program implementation vehicle will also provide it access to actively assist the GODR in developing long-term housing policy and programs for low income groups. While the Mission did envisage that a drawn out disbursement schedule would develop under its Emergency Housing Program, it was able to take advantage of this situation in such a way as to permit its attitude towards shelter solutions to evolve with changes in circumstances and time.

With respect to the above policy framework parameters and the linkages achieved between agencies (local, national and international) and the post-disaster situation, it should be noted that both INVI and AID actively encouraged several PVO's to participate in housing programs despite the fact that they had no ongoing programs at the time in that sector. A key element here was the recognized need to develop effective linkages between beneficiaries and service agencies. However, from the standpoint of the PVO's, the results of the disaster relief program have been so encouraging that several of the PVO's are now developing their own long-term shelter programs.

Under INVI's leadership, an Interinstitutional Commission (CII-Viviendas; see Section 2) emerged. Additionally, several of the PVO's noted that AID's insistence on developing a cost recovery component in the program has provided an unexpected

source of funds to finance additional housing programs and/or other community development activities.

(c) Policy Criteria and Principles. Despite initial unpreparedness by major housing institutions -- public and private -- a number of issues were addressed over the post-disaster period and formed the basis for the establishment of preliminary performance criteria for the Dominican Republic Housing Relief and Reconstruction Program. Some the more important issues included criteria and policy for (a) participation; (b) permanency; and (c) economic and financial.

Beneficiary participation became a very important issue immediately after the hurricane. The fullest possible participation of the affected communities and groups was considered from the outset as an essential part of almost all efforts. This positive stance with respect to the early involvement of the community was very clearly reflected in the prior public and private experience with community participation in the Dominican Republic and a recognition that the form and function of housing solutions along with other relief efforts should be based on beneficiary identified needs and an accommodation of existing living patterns.

The issue of permanency after the hurricanes reflected an ongoing dialogue among both public and private services agencies concerning housing needs and housing solutions. In one sense, the disaster measurably accelerated the process of thinking through and establishing an implementable policy which was

responsive to both expressed needs and the limited financial and technical resources which could be made available. The terms "emergency", "temporary", "permanent", "rehabilitation" and "reconstruction" etc. became programmatically real in terms of actual solutions and linkages among them. In that sense, the post-hurricane efforts of INVI, AID and the PVO's represented a learning process.

The Brigades which INVI organized immediately following the disaster to assist affected individuals and families initially operated almost exclusively with the damaged materials which were scattered throughout the area. INVI officials contend that they became very aware of the need to have the community realize early on that the reconstruction efforts finally depended more on them than on the limited government resources which could be made available.

The provisional barracks housing which was put up after the hurricane in order to evacuate the refugee centers (schools and other public facilities) also provided INVI with a valuable lesson. The barracks housing, which was specifically designed to be provisional, immediately upon construction became permanent, despite all efforts to the contrary. The 2,478 units constructed in the second stage of INVI's total program are now requiring a reallocation of the number of rooms per family, added utility services and additional units constructed on the same site to make the original provisional housing more habitable. INVI now believes that the utilization of provisional housing for refugees located in public facilities must, if it is to be successful, be



based on pre-planned, phased followup which gives prior consideration to anticipated modifications, or perhaps, provides even less permanent provisional housing (multi-family tents) located on the sites where more permanent housing will be built.

The economic criteria for housing relief and reconstruction efforts evolved throughout the year following the disaster. Apart from the initial immediate action materials distribution efforts, there was a general consensus that the cost of housing solutions and the payment for the same must be at levels of economic feasibility for the low income victims. However, many difficulties were encountered due to the variety of sources of assistance which ultimately became available to the affected population and the tendency of households to "hold out for the best deal." Despite a myriad of problems, almost all efforts, both public and private, were continually directed at the need to assist in forms which do not reduce the dignity of individuals nor which encourage inaction or expectation of additional free assistance.

Furthermore, INVI made a major effort to utilize relief and reconstruction efforts in housing to aid the economic recovery of the community in which it was working. This was accomplished by maximizing the employment of unemployed individuals, the utilization of self-help labor.

## 2. Planning and Coordination

When Hurricane David struck the Dominican Republic, institutional mechanisms for the planning and coordination of

normal housing production were in a state of change. Since the current government administration had been in office for only about a year, major institutional changes were still underway with respect to all areas and aspects of institutional development and coordination, particularly the planning and production of housing. While many public entities were willing and anxious to collaborate, intersectoral coordination was still at an incipient state. Furthermore, few formalized mechanisms existed for the coordination of public and private sector activities.

The increasing amounts of assistance available to assist the affected individuals and households after the hurricane had to deal with the lack of effective mechanisms and criteria for utilizing such assistance, especially in housing. There appear to have been minimal prior linkages between INVI and other disaster mechanisms such as Civil Defense and the military who have been traditionally responsible for pre- and post-emergency activities in the Dominican Republic. The administrative separation of the various components of the relief effort was therefore initially handled by a Presidential Committee consisting of those major relevant agencies who carry normal programs in housing and basic infrastructure and public services. Several false starts were made initially in the management and coordination of the supply and distribution of material assistance in accordance with need. Most participating groups found themselves subjected to an almost insurmountable amount of meetings focused on coordinating efforts in a situation

where everyone wanted to be of assistance but few coordinating mechanisms existed. With respect to INVI, a change in the executive direction of INVI was made during the second month of emergency efforts when a new Director was appointed.

Likewise, as mentioned earlier, while USAID in the Dominican Republic was interested in providing assistance which would support a continuity of housing provisions, it did not have a housing development strategy and therefore also had to gain experience over the process of its post-disaster efforts.

For both the national and international agencies, the existence of numerous non-formalized activities played a significant role in their post hurricane activities. However, since very little planning for post-disaster processes had been carried out prior to Hurricane David, this potential was only discovered in the course of trying to recognize and respond effectively to the needs of the affected population. Extensive work needed to be done initially in becoming more familiar with the characteristics of available resources within the disaster area and the means in which such potential could be channeled within the existing housing production process.

Significantly, during the post-hurricane period, both USAID and INVI were able to identify human, technical and financial resources which are transferrable not only to the post hurricane situation implementation but also appropriate to direct continuous application in the ongoing GODR housing activities. The Inter-institutional Commission, composed of public agencies and PVO's, was organized by INVI. It represents an excellent

example of a mechanism which served both the immediate needs as well as the countries continuing need to address the existing housing deficit.

The learning process between the post-hurricane and ongoing conditions is now an area that INVI wants to review in order to develop those aspects that may be applicable to the alleviation of the ongoing housing production crisis as well as to set the basis for future post-disaster actions which more fully utilize and develop the basic housing processes.

Pre-disaster planning and organization is important for two major reasons:

- (1) The entire disaster relief effort (both short- and medium-term) must be seen as one comprehensive program. If the initial disaster relief effort is badly managed (poor timing, distribution, type of relief provided, target group selected, etc.) or if it is not seen as setting the basis for programs to follow, the medium-term program can be severely undermined in the eyes of local government officials and/or the households to be served by the program.
- (2) Unless the approach and mechanisms for organizing a comprehensive disaster relief effort are well-planned in advance of the disaster, the timing of the medium-term relief can be affected greatly. (In the present

case of the AID/Dominican Republic response to Hurricane David, while the decision to work directly with already operational PVO's greatly facilitated the rapid implementation of AID's program, it was approximately three months from the day of the hurricane until the first materials packages were being sold as part of AID's program.)

### 3. Economics -- Financing and Cost Recovery

The economics of the post-hurricane housing program in the Dominican Republic has potentially widespread impacts ranging from the cost of a housing solution to the beneficiary groups as well as the effects on the national economy. In actual experience, the resolution of these impacts was not the product of prior planning nor coordination, but rather depended on the specifics of each assistance agency's programs, the ways in which they procured and distributed materials, the solution involved, and the labor required to complete the solution. This lack of preparation probably resulted in the development of some solutions which, if considered in terms of the agencies total resource levels, would not be considered a wise use of the agency's resources. Frequently, the costs of materials was the prime determinant on the housing solution type and the other non-material costs were disregarded. The inclusion of costs for the setting up of transportation, warehousing, construction tools and equipment, labor and supervision, training and general overhead

were considered as part of the basic costs by each participating agency on an individual basis. No adequate prior review of the extent of such costs and their ultimate effect on the viability of the housing solutions carried out was possible.

Some cost savings resulted from basic public and private policy. For example, full recognition was given to the effective utilization of the extensive body of competent Dominican professionals and supervisors in both the public and private sectors whose services were an essential element of most every post-hurricane effort. This resulted in considerable savings in the cost of technical assistance while at the same time providing fully acculturated and knowledgeable technical and human resources.

Cost recovery and financing of housing solutions after the hurricane was perhaps the most important issue to the beneficiaries of relief and reconstruction efforts. There was a great deal of variety in both the philosophy and the mechanisms of cost recovery and repayment procedures. Some of the approaches utilized included: (a) the provision of construction materials and the furnishing of supervisory and administrative assistance to a group of organized families who carried out self-help solutions; (b) the development of a subsidized materials program with the beneficiaries providing the labor; (c) money and building materials provided to a local organization which extended loans, with repayment going into a revolving fund utilized to finance community projects; and (d) the construction of houses and their delivery to recipients free of charge.

Needless to say, the discrepancies and inconsistencies in approaches frequently led to confusion, uncertainty and even sometimes frustration on the part of beneficiary groups. As mentioned earlier, frequently the recipients would review several assistance sources, hoping to utilize the best and most economic offer. In many cases, where agencies provide emergency giveaway programs, they found it extremely difficult to end such efforts or make an orderly transition into non-subsidized or partially subsidized schemes.

Clearly, in the Dominican Republic, many of these discrepancies occurred because of lack of prior preparation. Almost uniformly, the participating institutions (both public and private) were concerned about the need to strengthen individual and group self-reliance through some form of repayment and through full community participation in the development of the financing and cost recovery mechanisms. However, the lack of adequate prior planning and institutional coordination caused individual efforts to become complicated when neighboring relief and reconstruction efforts varied in the burden of responsibilities which they placed on the recipients.

There were many unresolved issues in the recent efforts which still need to be resolved by the participating agencies. What procedures should be followed when an agency does not want to recover its capital? The use of subsidized sales (as per the USAID effort) and the turning over of the collection effort to ongoing institutions needs further review and study based on the recent experiences. These and other issues have already been

identified by INVI, USAID and the participating PVO's and other government organizations as primary considerations in preparing for future natural disasters.

B. RECOMMENDATIONS

1. Recommendations for Action by the GODR

In August of 1981, almost one year after Hurricane David struck, INVI, the prime government agency responsible for the relief and reconstruction efforts in housing, made several key recommendations to the Dominican government, its people and its institutions -- public and private. The majority of these recommendations suggested a broad initial framework for continuing the learning and development process in order to better prepare the country to both prevent as well as to prepare for future natural disasters. Among the important recommendations made by INVI, the PADCO Evaluation Team particularly recognizes and subscribes to the following:

- (a) Create a National Disaster Preparedness Committee responsible for the mobilization and coordination of the Dominican people and its institutions in order to evaluate the potential needs and plan for necessary preventive/preparedness actions as well as for the effective and efficient mobilization of post-disaster relief and reconstruction efforts in case of future natural disasters.



- (b) Establish a National Disaster Preparedness Policy with norms and guidelines for the prevention and prevision against disasters. This should include all stages from physical planning of human settlements to the construction norms and standards in order to relate construction systems relative to the risks which they face.
- (c) Study the feasibility of establishing a system of refugee facilities for the adequate protection of the community in similar disaster situations.
- (d) Finally, and most importantly, INVI has also suggested the development of a national seminar or forum under the auspices of the GODR in coordination with the private sector, to share the experiences of the distinct sectors which participated in the hurricane disaster and the subsequent reconstruction activities. It is anticipated that such a seminar will not only permit the proper evaluation of the post-disaster efforts but will be directed at the initiation of a continuous institutional development process directed towards better preparing the Dominican Republic, its people and its institutions to confront future natural disasters or emergencies.

## 2. Recommendations for Actions by USAID/DR

The AID Mission at the outset of the disaster relief effort made two very important managerial decisions. First, during the first few months following the hurricane, the responsibility for the development and management of shelter relief programs was handled through an informal group of AID Mission personnel. This decision permitted several direct hire staff to gain experience in disaster relief response, as well as to permit information coming from various sources to be shared by all persons dealing with the relief program.

As the initial emergency phase of the program was completed and the Mission began to develop a medium-term housing reconstruction strategy, responsibility for the program was assigned to a project manager who was responsible for dealing with a specific group of implementing agencies.

However, despite the obvious positive achievements of USAID/DR relief and reconstruction efforts in housing, many actions can now be taken which will facilitate greater efficiency and effectiveness of the Mission's post-disaster efforts in the future. The most important recommendations include:

- (a) USAID/DR and OFDA should seek to provide every possible support to the efforts of INVI and the GODR to establish ongoing mechanisms for the effective evaluation of recent post-hurricane efforts and the development of effective mechanisms for planning and preparing for future natural disasters.

(b) It is essential that AID/Dominican Republic develop and maintain a standing Disaster Preparedness Committee in order to be able to rapidly and efficiently organize the Mission's short- (1-2 months) and medium-term (1-2 years) disaster relief efforts. The committee would include AID personnel not only with a knowledge of shelter and housing, but also with expertise in the areas of food, sanitation, medical supplies and clothing. The committee would be staffed by 3-4 permanent AID employees on the basis of their role within the mission (i.e., Director, Deputy Director, Disaster Relief Officer, Agricultural Officer, Housing Officer, etc.). This committee would be responsible for establishing the Mission's policies and objectives with respect to disaster relief. It would be organized in such a way as to be able to provide both a rapid immediate response, as well as to immediately begin the preparations for AID's medium-term response (emergency reconstruction). The committee would have the capacity to make an initial damage assessment and to determine what emergency materials are immediately required.

(c) Due to the possibility of damage and transportation difficulties, it is not recommended that emergency materials be stockpiled in the Dominican Republic. Rather, after determining a range of materials which

would be required in the event of a disaster, they would be stored in Puerto Rico, Panama or Southern Florida.

(d) A list of private contractors with security clearance should be on file with the Mission for immediate contact if their services were required for initial disaster relief. These same contractors would serve as an experienced pool of expertise which could be quickly called upon to begin to organize the more medium-term disaster response (in the case of Hurricane David, the Emergency Housing Program).

(e) The AID Mission, working in close coordination with SER/COM and OFDA in Washington, should have on file standard contracts and materials specifications for the purchase of any additional emergency materials (not available locally or stockpiled) required immediately after a disaster and for the rapid purchase (within the 2-month OFDA relaxation of tender requirements) of materials required for the medium-term program.

In summary, it is essential that an AID Mission have a clear idea before a disaster strikes of how/why (policies and objectives), for whom (target population), when (timing) and with what (appropriate program) it plans to confront a disaster.

- (f) In future post-disaster efforts, it would be advisable for the Mission to contract a full-time PSC to monitor the program and to consider using a second contractor whose time would be spent exclusively in the field monitoring the progress of the repair and reconstruction program by the implementing agencies.
- (g) In order to be able to use and build on the Dominican Republic disaster relief experience, greater documentation should be developed and maintained which helps to show the "how and the why" of setting up the AID Emergency Housing Program. For example, how was it decided initially to finance a building materials program and not a basic core solution? The choice of rural zones over urban areas? Why were the PVO's selected for program implementation and not INVI? Immediately after the hurricane and during the first several field damage assessment trips, a brief but well-documented program beneficiary survey would have been very useful. This type of user survey would have substantiated the type of assistance required for an emergency reconstruction program and the affected households ability to pay for the program.
- (h) After having decided to work through the PVO's and allow them to organize the materials package program

based on their own individual operational procedures and by-laws, each PVO's particular way of structuring its program with respect to selection of community groups with which to work, beneficiaries to be served, cost recovery mechanisms, use to be made of the recovered funds, etc. should have been placed in the grant project agreement.

- (i) As part of future efforts, a separate filing system should be organized within the AID Mission to document the flow of funds from AID to the individual PVO's, the purchase of materials by the PVO's, the acceptance of the materials by the rural community groups and the distribution of the materials to the program beneficiaries.
- (j) Either AID or the individual PVO's should undertake, internal to the program, a bi-weekly or at a minimum a monthly audit of the disbursement of materials. Based on these audits, a monthly financial report should be submitted to AID by each PVO. At the end of the program, an external audit should be conducted of each PVO's participation in the program.
- (k) In future disaster reconstruction programs organized to work through local PVO affiliates, careful thought should be given distribution criteria, particularly to

the issue of only working with an associated group's membership affiliates.

- (l) The capacity of the program beneficiaries to pay for an emergency housing program and the use to be made of the recovered funds should be thoroughly examined and documented in advance of program initiation.
- (m) At the completion of a subsidized materials package relief program, an end use survey is very useful. How have the program beneficiaries used their materials? Have they been used, stored or resold? A quick random survey of perhaps ten households per service agency might be undertaken to verify these results.
- (n) Greater emphasis should have been placed on coordinating the individual activities of those PVO's participating in AID's Emergency Housing Program (i.e., exchange of information on program implementation, availability of technical support, procurement of materials, etc.).





## ANNEX 1

### AID/PVO RECONSTRUCTION PROGRAM

#### DESCRIPTION OF

#### PVO PROGRAMS, AND PROJECTS\*

1. PVO: CARE

Grant Funds: \$130,000

#### Policy Objectives:

CARE's purpose was to initiate a rural housing distribution program. It developed a pilot project for the distribution of construction materials through a subsidized sales program which eventually would reach 3,000 families in the Bani and San Cristobal regions. This materials package versus a completed solution approach was adopted because of the limited funds available for shelter programs.

- Phase I: Granted \$30,000 to repair 93 homes in El Limonal, Province of Peravia. Worked with the Pro-Bani

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\* This Annex is limited in scope to only those PVO programs and projects which were financed by AID. Many of these PVO's had access to other sources of financing and therefore reached greater numbers of beneficiaries than described here.

Committee. Repaired 60 homes in Sainagua and Malpaez. Province of San Cristobal working with FEDOCOOP.

- Phase II: Additional grant of \$50,000 to repair additional 100 homes in Limonal and 125 in Sainagua-Malpaez. Downpayments of RD\$10-20 collected in this phase.

- Phase III: Additional grant of \$50,000 to expand repair program to La Colonia (117 families) and San Jose de Ocoa (100 families). The construction of two model hurricane resistant core houses was also financed as part of this phase.

Organization:

CARE became involved with the AID Emergency Housing Program through its food distribution program following Hurricane David. Because of a prior negative experience in housing, CARE/N.Y. was initially reluctant to go into housing. When it finally agreed to participate, and due to the limited availability of funds, it decided to focus its attention on repairing sound permanent structures. CARE distributed the materials packages through the field service agencies of the Committee Pro-Bani and FEDOCOOP.

## Planning and Coordination:

- Planning:

The initial planning revolved around the provision of materials and technical support for the repair of 153 homes. CARE did not initially envisage a cost recovery system. At the suggestion of AID, CARE decided to let the service agencies (Committee Pro-Bani and FEDOCOOP) be responsible for the collection of payments. A 20-30 percent recovery policy was envisaged. CARE assigned two field supervisors to work with the service agencies to identify and train the service managers who would work with the community to prepare a master list of the needs of the affected families. From this master list the program beneficiaries would be selected. Bank accounts were opened for the deposit of funds accumulated from the sale of materials packages. CARE provided zinc, nails, wood and hand tools. It was reluctant to provide cement because of storage problems. CARE examined the needs of the beneficiaries in order to assemble a comprehensive package.

- Geographic Location:

El Limonal, Sainagua, Malpaez, La Colonia and San Jose de Ocoa.

- Beneficiaries:

595 homes repaired.

- Service Agencies:

Committee Pro-Bani and FEDOCOOP.

- Extentionists:

The two CARE field staff identified and selected service managers to oversee the repair program at the local level with assistance from the CARE staff.

- Training and Supervision:

CARE's regional coordinators were responsible for the training and monitoring of service managers. Training was undertaken during the daily work experience. CARE managers reviewed all materials requests and distribution lists. Initially the skilled labor support staff received no training, but during Phase II they did receive training in the CRS hurricane resistant house.

- Coordination:

In the El Limonal service area, CARE coordinated its repair efforts with the Office of Community Development (ODC). In most service areas, food for work programs were provided for the work brigades and the "maestros de obra."

### Program Financing and Accountability:

- Funding Source:

AID grant funds of \$130,000.

- Costs Recovered:

To date RD\$7,332 has been recovered and put back into the program. The program beneficiaries were charged RD\$10-30 per package initially, with the remaining costs to be recovered by the service agencies.

- Required Forms:

(1) List of potential beneficiaries; (2) master list of beneficiaries and their needs; (3) signed distribution forms and receipts of materials by program beneficiaries.

- Audits:

Bank accounts monitored by CARE. Field staff performed periodic audits of service manager's activities. CARE submitted periodic reports to AID.

### Program Implementation:

- Materials:

Purchased through local suppliers. Stored in CARE warehouse in Santo Domingo. Materials transported to service agencies either in CARE or private local truckers.

- Service Agency Warehousing:

Dependent on availability; service managers responsible for receiving materials.

- Distribution:

Service manager and the community responsible for the distribution of materials to the program beneficiaries. Distributions timed to the availability of the work brigades.

- Materials Package:

Determined on the basis of a user needs survey.

- Monitoring of Construction:

Skilled labor provided to assist the work brigades.

2. PVO: Servicio Social de Iglesias Dominicanas (SSID)

Grant Funds: \$129,000

Policy Objectives:

SSID's stated purpose was to finance home repairs in the Municipio of Cambito. Province of San Cristobal

in the villages of Altos de Pundun and Mucha Agua. SSID took the responsibility for the distribution of materials, as well as providing the necessary technical support and project supervision. SSID was initially interested in constructed completed units, but due to a lack of funds agreed to participate in the repair program.

Organization:

SSID organized community groups at the grassroots level for the reconstruction effort.

Planning and Coordination:

- Planning:

SSID conducted a house-by-house damage survey with the participation of the community in the exercise. Three carpenters were hired to assist the community's self-help efforts. A committee with the responsibility for the distribution of materials was formed in each project area. The entire community had the responsibility for the materials stored in its area.

- Geographic Location:

Province of San Cristobal, Municipio of Cambito, villages of Altos de Pundun and Mucha Agua.

- Beneficiaries:

355 homes repaired.

- Training and Supervision:

Twenty foreign volunteers under the auspices of the World Council of Churches came in for 20 days to help in the community repair efforts. In addition, three carpenters were assigned to assist the organized work groups (one per 10 houses). They used the CRS technical manuals as they became available. SSID tried to organize a training workshop with the other AID/PVO's, but it did not work out due to a lack of coordination.

- Coordination:

Due to the isolation of the villages in which it worked, SSID was the only organization working in the area.

Program Financing and Accountability:

- Funding Source:

SSID has received \$129,000 in grant funds from AID. These funds were disbursed in three phases of \$29,000, \$50,000 and \$50,000, respectively.



- Costs Recovered:

In Phase I of the program, RD\$10-70 were collected per beneficiary. In Phase II, this amount was decreased to RD\$10 per beneficiary. It was mutually decided between SSID and the service agencies that 50 percent of materials costs would be collected from the program beneficiaries over a period of 2-3 years depending on the harvest cycle. Beneficiaries were not initially informed of the 50 percent subsidy in order to make an accurate assessment of the basic repairs needed. The funds recovered are being held in a special bank account which will later be used for additional housing activities.

- Audits:

SSID church representatives were responsible for keeping the accounts on the amount of materials purchased and subsequently distributed to the beneficiaries. The SSID Project Manager regularly reviewed the account books to maintain accuracy.

Program Implementation:

The implementation strategy of SSID consists of the following elements:

1. Organize a reconstruction committee in the participating communities (formed from the community leaders);

2. Undertake a field survey of the financial and technical requirements of the affected families;
3. Obtain adequate financing;
4. Distribute materials and provide technical assistance;
5. Organize repayment schedule of the program beneficiaries.

3. PVO: Southern Baptist Mission of the Dominican Republic

Grant Funds: \$3,000

Program Description:

A grant of \$3,000 was donated to the Southern Baptist Mission to finance emergency home repairs activities already underway in the area south of the San Cristobal Highway between the Nigua River and La Posada. The funds were used for the purchase of construction materials. Related transportation costs will also be covered by the AID funds. Twenty housing units were constructed with the assistance of construction teams brought in from the U.S. on a voluntary basis.

4. PVO: American Institute for Free Labor Development  
(AIFLD)

Grant Funds: \$50,000

Policy Objectives:

AIFLD worked through FENAC (?) to finance home repairs in Sabana Palenque, Azua, Jarabacoa, Dajabon and Yuna. Materials were distributed at subsidized rates. Initially, 225 homes were to be repaired, but through careful damage assessment, 430 homes were able to be repaired with the donated funds.

Organization:

AIFLD worked through FENAC, a Dominican rural agrarian cooperative, which they helped to organize eight years ago.

Planning and Coordination:

- Planning:

AIFLD acts as the guarantor to AID that FENAC will execute the program as agreed. FENAC obtained the price quotations for the materials and then gave FENAC an advance for materials purchase. Upon proof of purchase, FENAC was given another advance. Areas and communities to be served decide jointly between AIFLD and FENAC. FENAC rented the transport and oversaw the delivery of materials

to the designated service agencies. All beneficiaries were FENAC members. Each beneficiary was required to sign a contract agreeing to repay 1/3 of the materials and transport costs. Materials were handed over after the payment of a token downpayment. The remainder was due at harvest. The recovered funds of \$12,350 were put into a Rural Production and Marketing Credit account.

- Geographic Location:

Sabana Palenque, Azua, Yuna, Dajabon and Jarabacoa.

- Beneficiaries:

Program open to active members of FENAC only, but families were allowed to join in order to participate in the materials program. 430 homes were repaired.

- Training and Supervision:

In January 1979, AIFLD held two one-day seminars with FENAC personnel concerning implementation of the program and the required documentation. A list of appropriate materials was prepared at this seminar.

- Coordination:

AIFLD provided overall operational review of FENAC.

### Program Financing and Accountability:

- Funding Source:

AID grant funds of \$50,000

- Costs Recovered:

FENAC members agreed to repay 1/3 of the materials costs. \$12,350 has been recovered to date. Part of the accumulated funds are to be used to purchase land for a FENAC Educational Center. RD\$5,000 was used as a downpayment to purchase a truck for a marketing program and the remainder was deposited into the regular FENAC Credit Program to assist members before harvest.

- Audits: N.A.

### Program Implementation:

- Materials:

FENAC determined the quantity of materials required and purchased them from the supplier in Santo Domingo. Transport was hired and the materials were stored in FENAC centers.

- Monitoring of Construction:

FENAC staff in each locality were responsible for the promotion and distribution of materials, as well as for monitoring the members work activities.

5. PVO: Dominican Development Foundation (DDF)

Grant Funds: \$150,000

Policy Objectives:

Initially, they were involved in the distribution of materials for roofing repairs, etc. through church groups. This practice evolved into a longer-term strategy of working through rural agricultural groups to promote the construction of low cost durable shelter solutions. DDF was interested in using the construction of houses as a means for promoting its development programs and encouraging community strength and cooperative viability.

Organization:

Worked in the Bani region with various small farmer groups.

Planning and Coordination:

- Planning:

In the initial emergency phase of DDF's disaster relief program, it provided loans of up to RD\$2,500 per beneficiary to repair or rebuild damaged dwellings. They worked through local church groups and their own small

farmer associations. Under the AID-financed repair program, a materials package maximum amount of RD\$400 per unit persuaded DDF to work exclusively through its own associations.

- Geographic Location:

Small agricultural communities in the Bani and San Cristobal region.

- Beneficiaries:

477 homes repaired; in the process of this number of units, DDF worked through 28 existing small farmer associations in 24 communities and served approximately 3,000 persons through the program.

- Extentionists:

The small farmer associations had existing administrative capabilities.

- Training and Supervision:

The program provided the technical supervision of a "maestro de obra". In addition, each association formed a committee responsible for overseeing that repairs were carried out on a correct and timely basis. This committee submitted monthly reports to the association's governing body.

- Coordination:

In some of the rural communities, the AID/DDF program worked closely with the INVI work brigades in order to obtain assistance during the more difficult construction stages.

Program Financing and Accountability:

- Funding Source:

DDF has received \$150,000 in grant funds from AID. These funds were disbursed in two phases of \$50,000 each.

- Costs Recovered:

DDF distributed the building materials package on a credit basis. The costs will be recovered over a period not to exceed 15 years at an annual interest rate of 2 percent.

Program Implementation:

The materials purchased from the donation of the AID grant funds were stored in a warehouse in the community of Alto de Peravia in Bani. The materials, in turn, were distributed to the participating service agencies for distribution to the program beneficiaries. The program beneficiaries were responsible for supplying the labor component of the repair effort.



6. PVO: Catholic Relief Service (CRS)

Grant Funds: \$76,000

Policy Objectives:

CRS's purpose is to provide financing for low cost housing solutions, as well as training and education in the construction of wind resistant shelter. CRS made a decision not to participate in the housing repair portion of AID's Emergency Housing Program but rather to construct completed units. When it finally did join with AID, it was in the production of 84 basic core units.

Organization:

Several agencies are coordinating their efforts in the construction of the 84 core units in Arroyo Canas. CRS is working directly through Father Quinn's Asociacion Para el Desarrollo de San Jose de Ocoa. The President's Office is supplying the zinc roofing materials, while INVI is supplying the technical support. The whole operation is channeling assistance to self-help groups in Arroyo Canas which are undertaking the construction.

## Planning and Coordination:

- Planning:

CRS's scope was to provide the self-help groups with building materials and sufficient technical support to construct 84 core units which include concrete foundations and floors, a concrete block pedestal approximately 1 meter in height and sufficient lumber for the remaining structure and roof trusses. To assist in the construction, salaried master builders would be provided to supervise the construction of the work groups. The master builders would also teach local masons and carpenters how to build hurricane resistant housing using the Intertect design.

- Geographic Location:

Arroyo Canas, Province of Peravia.

- Beneficiaries:

84 families who lost their homes and land due to flooding.

- Service Agencies:

CRS is working through the San Jose de Ocoa Asociacion.

- Training and Supervision:

CRS organized a model construction/training course in Sabana Larga for local craftsmen. Those participating were given pamphlets showing the weak points of traditional construction methods, as well as the recommended improvements. To aid in project construction, skilled foremen are being provided to oversee work activities. INVI has also provided technical support and project supervision. An electric saw and concrete block making machine have also been provided. CRS supervises the disbursement of funds through the Asociacion.

- Coordination:

See preceeding section on "Organization."

Program Financing and Accountability:

- Funding Source:

In addition to AID's donation of \$76,000, the President's Office made an in-kind contribution of zinc roofing material. INVI was responsible for supplying a revised site plan including drainage facilities and will be responsible for supplying the site with water.

- Cost Recovery:

Each family will repay 40 percent of the total cost of the building materials over a 2-3 year period.

Recovered funds are to be used in a manner decided upon by the program beneficiaries for the benefit of the entire community.

- Audits:

The Asociacion must provide CRS with proof of use of funds.

Program Implementation:

- Materials:

Acquisition and distribution of materials is the responsibility of the Asociacion. A workshop/warehouse has been erected on-site to store and make building components.

- Allotment of Dwelling Units:

The allotment of the 84 units to the selected program beneficiaries will be done on the basis of a lottery.

- Materials Package:

The core unit selected is based on a design developed by CRS in San Jose de Ocoa. It is a basic core house using a base of concrete blocks with wood covering the upper half of the structure. The roof is of galvanized zinc. An upper limit of RD\$600 per unit for materials was set by AID.

● Monitoring of Construction:

See section under "Training and Supervision."